SEQUENCE LISTING

<110> Shigeo OHNO

<120> Novel SMG-1

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<150> PCT/JP01/10234
<151> 2001-11-22

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Leu Ser Ser Gly Gly Thr Asn Tyr Ser Arg Ser Trp Asn Asp Trp Gln
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Asn Ser Ala Val Val Ser Arg Gln Arg His Asp Asp Thr Arg Val His
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gct gac ata cag aat gac gaa aag ggt ggc tac agt gtc aat gga gga    594
Ala Asp Ile Gln Asn Asp Glu Lys Gly Gly Tyr Ser Val Asn Gly Gly
    75              80              85

tct ggg gaa aat act tat ggt cgg aag tcg ttg ggg caa gag ctg agg    642
Ser Gly Glu Asn Thr Tyr Gly Arg Lys Ser Leu Gly Gln Glu Leu Arg
90              95              100             105

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Val Asn Asn Val Thr Ser Pro Glu Phe Thr Ser Val Gln His Gly Ser
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cgt gct tta gcc acc aaa gac atg agg aaa tca cag gag aga tcg atg    738
Arg Ala Leu Ala Thr Lys Asp Met Arg Lys Ser Gln Glu Arg Ser Met
            125             130             135

tct tat tct gat gag tct cga ctg tcg aat ctt ctt cgg agg atc acc    786
Ser Tyr Ser Asp Glu Ser Arg Leu Ser Asn Leu Leu Arg Arg Ile Thr
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cgg gaa gac gac aga gac cga aga ttg gct act gta aag cag ttg aaa    834
Arg Glu Asp Asp Arg Asp Arg Arg Leu Ala Thr Val Lys Gln Leu Lys
    155             160             165

gaa ttt att cag caa cca gaa aat aag ctg gta cta gtt aaa caa ttg    882
Glu Phe Ile Gln Gln Pro Glu Asn Lys Leu Val Leu Val Lys Gln Leu
170             175             180             185

gat aat atc ttg gct gct gta cat gac gtg ctt aat gaa agt agc aaa    930
Asp Asn Ile Leu Ala Ala Val His Asp Val Leu Asn Glu Ser Ser Lys
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ttg ctt cag gag ttg aga cag gag gga gct tgc tgt ctt ggc ctt ctt    978
Leu Leu Gln Glu Leu Arg Gln Glu Gly Ala Cys Cys Leu Gly Leu Leu
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tgt gct tct ctg agc tat gag gct gag aag atc ttc aag tgg att ttt      1026
Cys Ala Ser Leu Ser Tyr Glu Ala Glu Lys Ile Phe Lys Trp Ile Phe
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agc aaa ttt agc tca tct gca aaa gat gaa gtt aaa ctc ctc tac tta      1074
Ser Lys Phe Ser Ser Ser Ala Lys Asp Glu Val Lys Leu Leu Tyr Leu
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tgt gcc acc tac aaa gca cta gag act gta gga gaa aag aaa gcc ttt      1122
Cys Ala Thr Tyr Lys Ala Leu Glu Thr Val Gly Glu Lys Lys Ala Phe
250             255             260             265

tca tct gta atg cag ctt gta atg acc agc ctg cag tct att ctt gaa      1170
Ser Ser Val Met Gln Leu Val Met Thr Ser Leu Gln Ser Ile Leu Glu
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Asn Val Asp Thr Pro Glu Leu Leu Cys Lys Cys Val Lys Cys Ile Leu
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Leu Val Ala Arg Cys Tyr Pro His Ile Phe Ser Thr Asn Phe Arg Asp
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aca gtt gat ata tta gtt gga tgg cat ata gat cat act cag aaa cct      1314
Thr Val Asp Ile Leu Val Gly Trp His Ile Asp His Thr Gln Lys Pro
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tcg ctc acg cag cag gta tct ggg tgg ttg cag agt ttg gag cca ttt      1362
Ser Leu Thr Gln Gln Val Ser Gly Trp Leu Gln Ser Leu Glu Pro Phe
330             335             340             345

tgg gta gct gat ctt gca ttt tct act act ctt ctt ggt cag ttt ctg      1410
Trp Val Ala Asp Leu Ala Phe Ser Thr Thr Leu Leu Gly Gln Phe Leu
                350             355             360

gaa gac atg gaa gca tat gct gag gac ctc agc cat gtg gcc tct ggg      1458
Glu Asp Met Glu Ala Tyr Ala Glu Asp Leu Ser His Val Ala Ser Gly
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Glu Ser Val Asp Glu Asp Val Pro Pro Pro Ser Val Ser Leu Pro Lys
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Leu Ala Ala Leu Leu Arg Val Phe Ser Thr Val Val Arg Ser Ile Gly
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410                 415                  420                  425

aca gat gtt ctg tac aga gta atg aga tgt gtg acg gct gca aac cag    1650
Thr Asp Val Leu Tyr Arg Val Met Arg Cys Val Thr Ala Ala Asn Gln
                    430                  435                  440

gtg ttt ttt tct gag gct gtg ttg aca gct gct aat gag tgt gtt ggt    1698
Val Phe Phe Ser Glu Ala Val Leu Thr Ala Ala Asn Glu Cys Val Gly
                445                  450                  455

gtt ttg ctc ggc agc ttg gat cct agc atg act ata cat tgt gac atg    1746
Val Leu Leu Gly Ser Leu Asp Pro Ser Met Thr Ile His Cys Asp Met
            460                  465                  470

gtc att aca tat gga tta gac caa ctg gag aat tgc cag act tgt ggt    1794
Val Ile Thr Tyr Gly Leu Asp Gln Leu Glu Asn Cys Gln Thr Cys Gly
        475                  480                  485

acc gat tat atc atc tca gtc ttg aat tta ctc acg ctg att gtt gaa    1842
Thr Asp Tyr Ile Ile Ser Val Leu Asn Leu Leu Thr Leu Ile Val Glu
490                  495                  500                  505

cag ata aat acg aaa ctg cca tca tca ttt gta gaa aaa ctg ttt ata    1890
Gln Ile Asn Thr Lys Leu Pro Ser Ser Phe Val Glu Lys Leu Phe Ile
                510                  515                  520

cca tca tct aaa cta cta ttc ttg cgt tat cat aaa gaa aaa gag gtt    1938
Pro Ser Ser Lys Leu Leu Phe Leu Arg Tyr His Lys Glu Lys Glu Val
                525                  530                  535

gtt gct gta gcc cat gct gtt tat caa gca gtg ctc agc ttg aag aat    1986
Val Ala Val Ala His Ala Val Tyr Gln Ala Val Leu Ser Leu Lys Asn
            540                  545                  550

att cct gtt ttg gag act gcc tat aag tta ata ttg gga gaa atg act    2034
Ile Pro Val Leu Glu Thr Ala Tyr Lys Leu Ile Leu Gly Glu Met Thr
        555                  560                  565

tgt gcc cta aac aac ctc cta cac agt cta caa ctt cct gag gcc tgt    2082
Cys Ala Leu Asn Asn Leu Leu His Ser Leu Gln Leu Pro Glu Ala Cys
570                  575                  580                  585
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tct gaa ata aaa cat gag gct ttt aag aat cat gtg ttc aat gta gac    2130
Ser Glu Ile Lys His Glu Ala Phe Lys Asn His Val Phe Asn Val Asp
            590             595             600

aat gca aaa ttt gta gtt aaa ttt gac ctc agt gcc ctg act aca att    2178
Asn Ala Lys Phe Val Val Lys Phe Asp Leu Ser Ala Leu Thr Thr Ile
            605             610             615

gga aat gcc aaa aac tca cta ata ggg atg tgg gcg cta tct cca act    2226
Gly Asn Ala Lys Asn Ser Leu Ile Gly Met Trp Ala Leu Ser Pro Thr
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gtc ttt gca ctt ctg agt aag aat ctg atg att gtg cac agt gac ctg    2274
Val Phe Ala Leu Leu Ser Lys Asn Leu Met Ile Val His Ser Asp Leu
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gct gtt cac ttc cct gcc att cag tat gct gtg ctc tac aca ttg tat    2322
Ala Val His Phe Pro Ala Ile Gln Tyr Ala Val Leu Tyr Thr Leu Tyr
650             655             660             665

tct cat tgt acc agg cat gat cac ttt atc tct agt agc ctc agt tct    2370
Ser His Cys Thr Arg His Asp His Phe Ile Ser Ser Ser Leu Ser Ser
            670             675             680

gcc tct cct tct ttg ttt gat gga gct gtg att agc act gta act acg    2418
Ala Ser Pro Ser Leu Phe Asp Gly Ala Val Ile Ser Thr Val Thr Thr
            685             690             695

gct aca aag aaa cat ttc tca att ata tta aat ctt ctg gga ata tta    2466
Ala Thr Lys Lys His Phe Ser Ile Ile Leu Asn Leu Leu Gly Ile Leu
            700             705             710

ctt aag aaa gat aac ctt aac cag gac acg agg aaa ctg tta atg act    2514
Leu Lys Lys Asp Asn Leu Asn Gln Asp Thr Arg Lys Leu Leu Met Thr
            715             720             725

tgg gct ttg gaa gca gct gtt tta atg agg aag tct gaa aca tac gca    2562
Trp Ala Leu Glu Ala Ala Val Leu Met Arg Lys Ser Glu Thr Tyr Ala
730             735             740             745

cct tta ttc tct ctt ccg tct ttc cat aaa ttt tgc aaa ggc ctt tta    2610
Pro Leu Phe Ser Leu Pro Ser Phe His Lys Phe Cys Lys Gly Leu Leu
            750             755             760

gcc aac act ctc gtt gaa gat gtg aat atc tgt ctg cag gca tgc agc    2658
Ala Asn Thr Leu Val Glu Asp Val Asn Ile Cys Leu Gln Ala Cys Ser
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765   770   775

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agt cta cat gct ctg tcc tct tcc ttg cca gat gat ctt tta cag aga    2706
Ser Leu His Ala Leu Ser Ser Ser Leu Pro Asp Asp Leu Leu Gln Arg
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tgt gtc gat gtt tgc cgt gtt caa cta gtg cac agt gga act cgt att    2754
Cys Val Asp Val Cys Arg Val Gln Leu Val His Ser Gly Thr Arg Ile
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cga caa gca ttt gga aaa ctg ttg aaa tca att cct tta gat gtt gtc    2802
Arg Gln Ala Phe Gly Lys Leu Leu Lys Ser Ile Pro Leu Asp Val Val
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cta agc aat aac aat cac aca gaa att caa gaa att tct tta gca tta    2850
Leu Ser Asn Asn Asn His Thr Glu Ile Gln Glu Ile Ser Leu Ala Leu
            830             835             840

aga agt cac atg agt aaa gca cca agt aat aca ttc cac ccc caa gat    2898
Arg Ser His Met Ser Lys Ala Pro Ser Asn Thr Phe His Pro Gln Asp
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ttc tct gat gtt att agt ttt att ttg tat ggg aac tct cat aga aca    2946
Phe Ser Asp Val Ile Ser Phe Ile Leu Tyr Gly Asn Ser His Arg Thr
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ggg aag gac aat tgg ttg gaa aga ctg ttc tat agc tgc cag aga ctg    2994
Gly Lys Asp Asn Trp Leu Glu Arg Leu Phe Tyr Ser Cys Gln Arg Leu
    875             880             885

gat aag cgt gac cag tca aca att cca cgc aat ctc ctg aag aca gat    3042
Asp Lys Arg Asp Gln Ser Thr Ile Pro Arg Asn Leu Leu Lys Thr Asp
890             895             900             905

gct gtc ctt tgg cag tgg gcc ata tgg gaa gct gca caa ttc act gtt    3090
Ala Val Leu Trp Gln Trp Ala Ile Trp Glu Ala Ala Gln Phe Thr Val
            910             915             920

ctt tct aag ctg aga acc cca ctg ggc aga gct caa gac acc ttc cag    3138
Leu Ser Lys Leu Arg Thr Pro Leu Gly Arg Ala Gln Asp Thr Phe Gln
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aca att gaa ggt atc att cga agt ctc gca gct cac aca tta aac cct    3186
Thr Ile Glu Gly Ile Ile Arg Ser Leu Ala Ala His Thr Leu Asn Pro
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gat cag gat gtt agt cag tgg aca act gca gac aat gat gaa ggc cat   3234
Asp Gln Asp Val Ser Gln Trp Thr Thr Ala Asp Asn Asp Glu Gly His
    955   960   965

ggt aac aac caa ctt aga ctt gtt ctt ctt ctg cag tat ctg gaa aat   3282
Gly Asn Asn Gln Leu Arg Leu Val Leu Leu Leu Gln Tyr Leu Glu Asn
970   975   980   985

ctg gag aaa tta atg tat aat gca tac gag gga tgt gct aat gca tta   3330
Leu Glu Lys Leu Met Tyr Asn Ala Tyr Glu Gly Cys Ala Asn Ala Leu
                990   995   1000

act tca cct ccc aag gtc att aga act ttt ttc tat acc aat cgc caa   3378
Thr Ser Pro Pro Lys Val Ile Arg Thr Phe Phe Tyr Thr Asn Arg Gln
            1005   1010   1015

act tgt cag gac tgg cta acg cgg att cga ctc tcc atc atg agg gta   3426
Thr Cys Gln Asp Trp Leu Thr Arg Ile Arg Leu Ser Ile Met Arg Val
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gga ttg ttg gca ggc cag cct gca gtg aca gtg aga cat ggc ttt gac   3474
Gly Leu Leu Ala Gly Gln Pro Ala Val Thr Val Arg His Gly Phe Asp
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ttg ctt aca gag atg aaa aca acc agc cta tct cag ggg aat gaa ttg   3522
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gaa gta acc att atg atg gtg gta gaa gca tta tgt gaa ctt cat tgt   3570
Glu Val Thr Ile Met Met Val Val Glu Ala Leu Cys Glu Leu His Cys
            1070   1075   1080

cct gaa gct ata cag gga att gct gtc tgg tca tca tct att gtt gga   3618
Pro Glu Ala Ile Gln Gly Ile Ala Val Trp Ser Ser Ser Ile Val Gly
            1085   1090   1095

aaa aat ctt ctg tgg att aac tca gtg gct caa cag gct gaa ggg agg   3666
Lys Asn Leu Leu Trp Ile Asn Ser Val Ala Gln Gln Ala Glu Gly Arg
        1100   1105   1110

ttt gaa aag gcc tct gtg gag tac cag gaa cac ctg tgt gcc atg aca   3714
Phe Glu Lys Ala Ser Val Glu Tyr Gln Glu His Leu Cys Ala Met Thr
    1115   1120   1125

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             1150              1155                 1160


gaa tcc aga aaa act gtg ctg tcc aaa ccg act gac tct tcc cct gag    3858
Glu Ser Arg Lys Thr Val Leu Ser Lys Pro Thr Asp Ser Ser Pro Glu
             1165              1170                 1175


gtt ata aat tat tta gga aat aaa gca tgt gag ttc tac atc tca att    3906
Val Ile Asn Tyr Leu Gly Asn Lys Ala Cys Glu Phe Tyr Ile Ser Ile
            1180              1185                 1190


gcc gat tgg gct gct gtg cag gaa tgg cag aac gct atc cat gac ttg    3954
Ala Asp Trp Ala Ala Val Gln Glu Trp Gln Asn Ala Ile His Asp Leu
           1195              1200                 1205


aaa aag agt acc agt agc act tcc ctc aac ctg aaa gct gac ttc aac    4002
Lys Lys Ser Thr Ser Ser Thr Ser Leu Asn Leu Lys Ala Asp Phe Asn
1210              1215                 1220                 1225


tat ata aaa tca tta agc agc ttt gag tct gga aaa ttt gtt gaa tgt    4050
Tyr Ile Lys Ser Leu Ser Ser Phe Glu Ser Gly Lys Phe Val Glu Cys
             1230              1235                 1240


acc gag cag tta gaa ttg tta cca gga gaa aat atc aat cta ctt gct    4098
Thr Glu Gln Leu Glu Leu Leu Pro Gly Glu Asn Ile Asn Leu Leu Ala
             1245              1250                 1255


gga gga tca aaa gaa aaa ata gac atg aaa aaa ctg ctt cct aac atg    4146
Gly Gly Ser Lys Glu Lys Ile Asp Met Lys Lys Leu Leu Pro Asn Met
            1260              1265                 1270


tta agt ccg gat ccg agg gaa ctt cag aaa tcc att gaa gtt caa ttg    4194
Leu Ser Pro Asp Pro Arg Glu Leu Gln Lys Ser Ile Glu Val Gln Leu
            1275              1280                 1285


tta aga agt tct gtt tgt ttg gca act gct tta aac ccg ata gaa caa    4242
Leu Arg Ser Ser Val Cys Leu Ala Thr Ala Leu Asn Pro Ile Glu Gln
1290              1295                 1300                 1305


gat cag aag tgg cag tct ata act gaa aat gtg gta aag tac ttg aag    4290
Asp Gln Lys Trp Gln Ser Ile Thr Glu Asn Val Val Lys Tyr Leu Lys
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caa aca tcc cgc atc gct att gga cct ctg aga ctt tct act tta aca   4338
Gln Thr Ser Arg Ile Ala Ile Gly Pro Leu Arg Leu Ser Thr Leu Thr
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gtt tca cag tct ttg cca gtt cta agt acc ttg cag ctg tat tgc tca   4386
Val Ser Gln Ser Leu Pro Val Leu Ser Thr Leu Gln Leu Tyr Cys Ser
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tct gct ttg gag aac aca gtt tct aac aga ctt tca aca gag gac tgt   4434
Ser Ala Leu Glu Asn Thr Val Ser Asn Arg Leu Ser Thr Glu Asp Cys
        1355   1360   1365

ctt att cca ctc ttc agt gaa gct tta cgt tca tgt aaa cag cat gac   4482
Leu Ile Pro Leu Phe Ser Glu Ala Leu Arg Ser Cys Lys Gln His Asp
1370   1375   1380   1385

gtg agg cca tgg atg cag gca tta agg tat act atg tac cag aat cag   4530
Val Arg Pro Trp Met Gln Ala Leu Arg Tyr Thr Met Tyr Gln Asn Gln
              1390   1395   1400

ttg ttg gag aaa att aaa gaa caa aca gtc cca att aga agc cat ctc   4578
Leu Leu Glu Lys Ile Lys Glu Gln Thr Val Pro Ile Arg Ser His Leu
          1405   1410   1415

atg gaa tta ggt cta aca gca gca aaa ttt gct aga aaa cga ggg aat   4626
Met Glu Leu Gly Leu Thr Ala Ala Lys Phe Ala Arg Lys Arg Gly Asn
          1420   1425   1430

gtg tcc ctt gca aca aga ctg ctg gca cag tgc agt gaa gtt cag ctg   4674
Val Ser Leu Ala Thr Arg Leu Leu Ala Gln Cys Ser Glu Val Gln Leu
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gga aag acc acc act gca cag gat tta gtc caa cat ttt aaa aaa cta   4722
Gly Lys Thr Thr Thr Ala Gln Asp Leu Val Gln His Phe Lys Lys Leu
1450   1455   1460   1465

tca acc caa ggt caa gtg gat gaa aaa tgg ggg ccc gaa ctt gat att   4770
Ser Thr Gln Gly Gln Val Asp Glu Lys Trp Gly Pro Glu Leu Asp Ile
              1470   1475   1480

gaa aaa acc aaa ttg ctt tat aca gca ggc cag tca aca cat gca atg   4818
Glu Lys Thr Lys Leu Leu Tyr Thr Ala Gly Gln Ser Thr His Ala Met
          1485   1490   1495

gaa atg ttg agt tct tgt gcc ata tct ttc tgc aag tct gtg aaa gct   4866
Glu Met Leu Ser Ser Cys Ala Ile Ser Phe Cys Lys Ser Val Lys Ala

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           1500                  1505                   1510

gaa tat gca gtt gct aaa tca att ctg aca ctg gct aaa tgg atc cag   4914
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   1515                  1520                   1525

gca gaa tgg aaa gag att tca gga cag ctg aaa cag gtt tac aga gct   4962
Ala Glu Trp Lys Glu Ile Ser Gly Gln Leu Lys Gln Val Tyr Arg Ala
1530                 1535              1540                   1545

cag cac caa cag aac ttc aca ggt ctt tct act ttg tct aaa aac ata   5010
Gln His Gln Gln Asn Phe Thr Gly Leu Ser Thr Leu Ser Lys Asn Ile
            1550              1555                   1560

ctc act cta ata gaa ctg cca tct gtt aat acg atg gaa gaa gag tat   5058
Leu Thr Leu Ile Glu Leu Pro Ser Val Asn Thr Met Glu Glu Glu Tyr
            1565              1570                   1575

cct cgg atc gag agt gaa tct aca gtg cat att gga gtt gga gaa cct   5106
Pro Arg Ile Glu Ser Glu Ser Thr Val His Ile Gly Val Gly Glu Pro
         1580              1585                   1590

gac ttc att ttg gga cag ttg tat cac ctg tct tca gta cag gca cct   5154
Asp Phe Ile Leu Gly Gln Leu Tyr His Leu Ser Ser Val Gln Ala Pro
   1595                  1600                   1605

gaa gta gcc aaa tct tgg gca gcg ttg gcc agc tgg gct tat agg tgg   5202
Glu Val Ala Lys Ser Trp Ala Ala Leu Ala Ser Trp Ala Tyr Arg Trp
1610                 1615              1620                   1625

ggc aga aag gtg gtt gac aat gcc agt cag gga gaa ggt gtt cgt ctg   5250
Gly Arg Lys Val Val Asp Asn Ala Ser Gln Gly Glu Gly Val Arg Leu
            1630              1635                   1640

ctg cct aga gaa aaa tct gaa gtt cag aat cta ctt cca gac act ata   5298
Leu Pro Arg Glu Lys Ser Glu Val Gln Asn Leu Leu Pro Asp Thr Ile
            1645              1650                   1655

act gag gaa gag aaa gag aga ata tat ggt att ctt gga cag gct gtg   5346
Thr Glu Glu Glu Lys Glu Arg Ile Tyr Gly Ile Leu Gly Gln Ala Val
         1660              1665                   1670

tgt cgg ccg gcg ggg att cag gat gaa gat ata aca ctt cag ata act   5394
Cys Arg Pro Ala Gly Ile Gln Asp Glu Asp Ile Thr Leu Gln Ile Thr
   1675                  1680                   1685
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gag agt gaa gac aac gaa gaa gat gac atg gtt gat gtt atc tgg cgt        5442
Glu Ser Glu Asp Asn Glu Glu Asp Asp Met Val Asp Val Ile Trp Arg
1690            1695            1700            1705


cag ttg ata tca agc tgc cca tgg ctt tca gaa ctt gat gaa agt gca        5490
Gln Leu Ile Ser Ser Cys Pro Trp Leu Ser Glu Leu Asp Glu Ser Ala
            1710            1715            1720


act gaa gga gtt att aaa gtg tgg agg aaa gtt gta gat aga ata ttc        5538
Thr Glu Gly Val Ile Lys Val Trp Arg Lys Val Val Asp Arg Ile Phe
            1725            1730            1735


agc ctg tac aaa ctc tct tgc agt gca tac ttt act ttc ctt aaa ctc        5586
Ser Leu Tyr Lys Leu Ser Cys Ser Ala Tyr Phe Thr Phe Leu Lys Leu
            1740            1745            1750


aac gct ggt caa att cct tta gat gag gat gac cct agg ctg cat tta        5634
Asn Ala Gly Gln Ile Pro Leu Asp Glu Asp Asp Pro Arg Leu His Leu
        1755            1760            1765


agt cac aga gtg gaa cag agc act gat gac atg att gtg atg gcc aca        5682
Ser His Arg Val Glu Gln Ser Thr Asp Asp Met Ile Val Met Ala Thr
1770            1775            1780            1785


ttg cgc ctg ctg cgg ttg ctc gtg aag cat gct ggt gag ctt cgg cag        5730
Leu Arg Leu Leu Arg Leu Leu Val Lys His Ala Gly Glu Leu Arg Gln
            1790            1795            1800


tat ctg gag cac ggc ttg gag aca aca ccc act gca cca tgg agg gga        5778
Tyr Leu Glu His Gly Leu Glu Thr Thr Pro Thr Ala Pro Trp Arg Gly
        1805            1810            1815


att att ccg caa ctt ttc tca cgc tta aac cac cct gaa gtg tat gtg        5826
Ile Ile Pro Gln Leu Phe Ser Arg Leu Asn His Pro Glu Val Tyr Val
        1820            1825            1830


cgc caa agt att tgt aac ctt ctc tgc cgt gtg gct caa gat tcc cca        5874
Arg Gln Ser Ile Cys Asn Leu Leu Cys Arg Val Ala Gln Asp Ser Pro
        1835            1840            1845


cat ctc ata ttg tat cct gca ata gtg ggt acc ata tcg ctt agt agt        5922
His Leu Ile Leu Tyr Pro Ala Ile Val Gly Thr Ile Ser Leu Ser Ser
1850            1855            1860            1865


gaa tcc cag gct tca gga aat aaa ttt tcc act gca att cca act tta        5970
Glu Ser Gln Ala Ser Gly Asn Lys Phe Ser Thr Ala Ile Pro Thr Leu
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                1870                    1875                    1880

ctt ggc aat att caa gga gaa gaa ttg ctg gtt tct gaa tgt gag gga      6018
Leu Gly Asn Ile Gln Gly Glu Glu Leu Leu Val Ser Glu Cys Glu Gly
        1885                    1890                    1895

gga agt cct cct gca tct cag gat agc aat aag gat gaa cct aaa agt      6066
Gly Ser Pro Pro Ala Ser Gln Asp Ser Asn Lys Asp Glu Pro Lys Ser
        1900                    1905                    1910

gga tta aat gaa gac caa gcc atg atg cag gat tgt tac agc aaa att      6114
Gly Leu Asn Glu Asp Gln Ala Met Met Gln Asp Cys Tyr Ser Lys Ile
      1915                    1920                    1925

gta gat aag ctg tcc tct gca aac ccc acc atg gta tta cag gtt cag      6162
Val Asp Lys Leu Ser Ser Ala Asn Pro Thr Met Val Leu Gln Val Gln
1930                    1935                    1940                    1945

atg ctc gtg gct gaa ctg cgc agg gtc act gtg ctc tgg gat gag ctc      6210
Met Leu Val Ala Glu Leu Arg Arg Val Thr Val Leu Trp Asp Glu Leu
                1950                    1955                    1960

tgg ctg gga gtt ttg ctg caa caa cac atg tat gtc ctg aga cga att      6258
Trp Leu Gly Val Leu Leu Gln Gln His Met Tyr Val Leu Arg Arg Ile
        1965                    1970                    1975

cag cag ctt gaa gat gag gtg aag aga gtc cag aac aac aac acc tta      6306
Gln Gln Leu Glu Asp Glu Val Lys Arg Val Gln Asn Asn Asn Thr Leu
        1980                    1985                    1990

cgc aaa gaa gag aaa att gca atc atg agg gag agg cac aca gct ttg      6354
Arg Lys Glu Glu Lys Ile Ala Ile Met Arg Glu Arg His Thr Ala Leu
        1995                    2000                    2005

atg aag ccc atc gta ttt gct ttg gag cat gtg agg agt atc aca gcg      6402
Met Lys Pro Ile Val Phe Ala Leu Glu His Val Arg Ser Ile Thr Ala
2010                    2015                    2020                    2025

gct cct gca gaa aca cct cat gaa aaa tgg ttt cag gat aac tat ggt      6450
Ala Pro Ala Glu Thr Pro His Glu Lys Trp Phe Gln Asp Asn Tyr Gly
                2030                    2035                    2040

gat gcc att gaa aat gcc cta gaa aaa ctg aag act cca ttg aac cct      6498
Asp Ala Ile Glu Asn Ala Leu Glu Lys Leu Lys Thr Pro Leu Asn Pro
        2045                    2050                    2055
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gca aag cct ggg agc agc tgg att cca ttt aaa gag ata atg cta agt   6546
Ala Lys Pro Gly Ser Ser Trp Ile Pro Phe Lys Glu Ile Met Leu Ser
     2060   2065   2070

ttg caa cag aga gca cag aaa cgt gca agt tac atc ttg cgt ctt gaa   6594
Leu Gln Gln Arg Ala Gln Lys Arg Ala Ser Tyr Ile Leu Arg Leu Glu
   2075   2080   2085

gaa atc agt cca tgg ttg gct gcc atg act aac act gaa att gct ctt   6642
Glu Ile Ser Pro Trp Leu Ala Ala Met Thr Asn Thr Glu Ile Ala Leu
2090   2095   2100   2105

cct ggg gaa gtc tca gcc aga gac act gtc aca atc cat agt gtg ggc   6690
Pro Gly Glu Val Ser Ala Arg Asp Thr Val Thr Ile His Ser Val Gly
         2110   2115   2120

gga acc atc aca atc tta ccg act aaa acc aag cca aag aaa ctt ctc   6738
Gly Thr Ile Thr Ile Leu Pro Thr Lys Thr Lys Pro Lys Lys Leu Leu
     2125   2130   2135

ttt ctt gga tca gat ggg aag agc tat cct tat ctt ttc aaa gga ctg   6786
Phe Leu Gly Ser Asp Gly Lys Ser Tyr Pro Tyr Leu Phe Lys Gly Leu
     2140   2145   2150

gag gat tta cat ctg gat gag aga ata atg cag ttc cta tct att gtg   6834
Glu Asp Leu His Leu Asp Glu Arg Ile Met Gln Phe Leu Ser Ile Val
     2155   2160   2165

aat acc atg ttt gct aca att aat cgc caa gaa aca ccc cgg ttc cat   6882
Asn Thr Met Phe Ala Thr Ile Asn Arg Gln Glu Thr Pro Arg Phe His
2170   2175   2180   2185

gct cga cac tat tct gta aca cca cta gga aca aga tca gga cta atc   6930
Ala Arg His Tyr Ser Val Thr Pro Leu Gly Thr Arg Ser Gly Leu Ile
         2190   2195   2200

cag tgg gta gat gga gcc aca ccc tta ttt ggt ctt tac aaa cga tgg   6978
Gln Trp Val Asp Gly Ala Thr Pro Leu Phe Gly Leu Tyr Lys Arg Trp
     2205   2210   2215

caa caa cgg gaa gct gcc tta caa gca caa aag gcc caa gat tcc tac   7026
Gln Gln Arg Glu Ala Ala Leu Gln Ala Gln Lys Ala Gln Asp Ser Tyr
     2220   2225   2230

caa act cct cag aat cct gga att gta ccc cgt cct agt gaa ctt tat   7074
Gln Thr Pro Gln Asn Pro Gly Ile Val Pro Arg Pro Ser Glu Leu Tyr

2235   2240   2245

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tac agt aaa att ggc cct gct ttg aaa aca gtt ggg ctt agc ctg gat   7122
Tyr Ser Lys Ile Gly Pro Ala Leu Lys Thr Val Gly Leu Ser Leu Asp
2250            2255              2260                2265

gtg tcc cgt cgg gat tgg cct ctt cat gta atg aag gca gta ttg gaa   7170
Val Ser Arg Arg Asp Trp Pro Leu His Val Met Lys Ala Val Leu Glu
                2270              2275              2280

gag tta atg gag gcc aca ccc ccg aat ctc ctt gcc aaa gag ctc tgg   7218
Glu Leu Met Glu Ala Thr Pro Pro Asn Leu Leu Ala Lys Glu Leu Trp
           2285              2290              2295

tca tct tgc aca aca cct gat gaa tgg tgg aga gtt acg cag tct tat   7266
Ser Ser Cys Thr Thr Pro Asp Glu Trp Trp Arg Val Thr Gln Ser Tyr
           2300              2305              2310

gca aga tct act gca gtc atg tct atg gtt gga tac ata att ggc ctt   7314
Ala Arg Ser Thr Ala Val Met Ser Met Val Gly Tyr Ile Ile Gly Leu
           2315              2320              2325

gga gac aga cat ctg gat aat gtt ctt ata gat atg acg act gga gaa   7362
Gly Asp Arg His Leu Asp Asn Val Leu Ile Asp Met Thr Thr Gly Glu
2330            2335              2340                2345

gtt gtt cac ata gat tac aat gtt tgc ttt gaa aaa ggt aaa agc ctt   7410
Val Val His Ile Asp Tyr Asn Val Cys Phe Glu Lys Gly Lys Ser Leu
               2350              2355              2360

aga gtt cct gag aaa gta cct ttt cga atg aca caa aac att gaa aca   7458
Arg Val Pro Glu Lys Val Pro Phe Arg Met Thr Gln Asn Ile Glu Thr
               2365              2370              2375

gca ctg ggt gta act gga gta gaa ggt gta ttt agg ctt tca tgt gag   7506
Ala Leu Gly Val Thr Gly Val Glu Gly Val Phe Arg Leu Ser Cys Glu
           2380              2385              2390

cag gtt tta cac att atg cgg cgt ggc aga gag acc ctg ctg acg ctg   7554
Gln Val Leu His Ile Met Arg Arg Gly Arg Glu Thr Leu Leu Thr Leu
           2395              2400              2405

ctg gag gcc ttt gtg tac gac cct ctg gtg gac tgg aca gca gga ggc   7602
Leu Glu Ala Phe Val Tyr Asp Pro Leu Val Asp Trp Thr Ala Gly Gly
2410            2415              2420                2425
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gag gct ggg ttt gct ggt gct gtc tat ggt gga ggt ggc cag cag gcc     7650
Glu Ala Gly Phe Ala Gly Ala Val Tyr Gly Gly Gly Gly Gln Gln Ala
            2430                2435                2440

gag agc aag cag agc aag aga gag atg gag cga gag atc acc cgc agc     7698
Glu Ser Lys Gln Ser Lys Arg Glu Met Glu Arg Glu Ile Thr Arg Ser
        2445                2450                2455

ctg ttt tct tct aga gta gct gag att aag gtg aac tgg ttt aag aat     7746
Leu Phe Ser Ser Arg Val Ala Glu Ile Lys Val Asn Trp Phe Lys Asn
        2460                2465                2470

aga gat gag atg ctg gtt gtg ctt ccc aag ttg gac ggt agc tta gat     7794
Arg Asp Glu Met Leu Val Val Leu Pro Lys Leu Asp Gly Ser Leu Asp
       2475                2480                2485

gaa tac cta agc ttg caa gag caa ctg aca gat gtg gaa aaa ctg cag     7842
Glu Tyr Leu Ser Leu Gln Glu Gln Leu Thr Asp Val Glu Lys Leu Gln
2490                2495                2500                2505

ggc aaa cta ctg gag gaa ata gag ttt cta gaa gga gct gaa ggg gtg     7890
Gly Lys Leu Leu Glu Glu Ile Glu Phe Leu Glu Gly Ala Glu Gly Val
            2510                2515                2520

gat cat cct tct cat act ctg caa cac agg tat tct gag cac acc caa     7938
Asp His Pro Ser His Thr Leu Gln His Arg Tyr Ser Glu His Thr Gln
            2525                2530                2535

cta cag act cag caa aga gct gtt cag gaa gca atc cag gtg aag ctg     7986
Leu Gln Thr Gln Gln Arg Ala Val Gln Glu Ala Ile Gln Val Lys Leu
            2540                2545                2550

aat gaa ttt gaa caa tgg ata aca cat tat cag gct gca ttc aat aat     8034
Asn Glu Phe Glu Gln Trp Ile Thr His Tyr Gln Ala Ala Phe Asn Asn
            2555                2560                2565

tta gaa gca aca cag ctt gca agc ttg ctt caa gag ata agc aca caa     8082
Leu Glu Ala Thr Gln Leu Ala Ser Leu Leu Gln Glu Ile Ser Thr Gln
2570                2575                2580                2585

atg gac ctt ggt cct cca agt tac gtg cca gca aca gcc ttt ctg cag     8130
Met Asp Leu Gly Pro Pro Ser Tyr Val Pro Ala Thr Ala Phe Leu Gln
            2590                2595                2600

aat gct ggt cag gcc cac ttg att agc cag tgc gag cag ctg gag ggg     8178
Asn Ala Gly Gln Ala His Leu Ile Ser Gln Cys Glu Gln Leu Glu Gly
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                    2605                  2610                  2615


gag gtt ggt gct ctc ctg cag cag agg cgc tcc gtg ctc cgt ggc tgt    8226
Glu Val Gly Ala Leu Leu Gln Gln Arg Arg Ser Val Leu Arg Gly Cys
        2620                  2625                  2630


ctg gag caa ctg cat cac tat gca acc gtg gcc ctg cag tat ccg aag    8274
Leu Glu Gln Leu His His Tyr Ala Thr Val Ala Leu Gln Tyr Pro Lys
        2635                  2640                  2645


gcc ata ttt cag aaa cat cga att gaa cag tgg aag acc tgg atg gaa    8322
Ala Ile Phe Gln Lys His Arg Ile Glu Gln Trp Lys Thr Trp Met Glu
2650                  2655                  2660                  2665


gag ctc atc tgt aac acc aca gta gag cgt tgt caa gag ctc tat agg    8370
Glu Leu Ile Cys Asn Thr Thr Val Glu Arg Cys Gln Glu Leu Tyr Arg
                2670                  2675                  2680


aaa tat gaa atg caa tat gct ccc cag cca ccc cca aca gtg tgt cag    8418
Lys Tyr Glu Met Gln Tyr Ala Pro Gln Pro Pro Pro Thr Val Cys Gln
                2685                  2690                  2695


ttc atc act gcc act gaa atg acc ctg cag cga tac gca gca gac atc    8466
Phe Ile Thr Ala Thr Glu Met Thr Leu Gln Arg Tyr Ala Ala Asp Ile
        2700                  2705                  2710


aac agc aga ctt att aga caa gtg gaa cgc ttg aaa cag gaa gct gtc    8514
Asn Ser Arg Leu Ile Arg Gln Val Glu Arg Leu Lys Gln Glu Ala Val
        2715                  2720                  2725


act gtg cca gtt tgt gaa gat cag ttg aaa gaa att gaa cgt tgc att    8562
Thr Val Pro Val Cys Glu Asp Gln Leu Lys Glu Ile Glu Arg Cys Ile
2730                  2735                  2740                  2745


aaa gtt ttc ctt cat gag aat gga gaa gaa gga tct ttg agt cta gca    8610
Lys Val Phe Leu His Glu Asn Gly Glu Glu Gly Ser Leu Ser Leu Ala
                2750                  2755                  2760


agt gtt att att tct gcc ctt tgt acc ctt aca agg cgt aac ctg atg    8658
Ser Val Ile Ile Ser Ala Leu Cys Thr Leu Thr Arg Arg Asn Leu Met
        2765                  2770                  2775


atg gaa ggt gca gcg tca agt gct gga gaa cag ctg gtt gat ctg act    8706
Met Glu Gly Ala Ala Ser Ser Ala Gly Glu Gln Leu Val Asp Leu Thr
        2780                  2785                  2790
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tct cgg gat gga gcc tgg ttc ttg gag gaa ctc tgc agt atg agc gga   8754
Ser Arg Asp Gly Ala Trp Phe Leu Glu Glu Leu Cys Ser Met Ser Gly
  2795   2800   2805

aac gtc acc tgc ttg gtt cag tta ctg aag cag tgc cac ctg gtg cca   8802
ʼAsn Val Thr Cys Leu Val Gln Leu Leu Lys Gln Cys His Leu Val Pro
2810   2815   2820   2825

cag gac tta gat atc ccg aac ccc atg gaa gcg tct gag aca gtt cac   8850
Gln Asp Leu Asp Ile Pro Asn Pro Met Glu Ala Ser Glu Thr Val His
        2830   2835   2840

tta gcc aat gga gtg tat acc tca ctt cag gaa ttg aat tcg aat ttc   8898
Leu Ala Asn Gly Val Tyr Thr Ser Leu Gln Glu Leu Asn Ser Asn Phe
        2845   2850   2855

cgg caa atc ata ttt cca gaa gca ctt cga tgt tta atg aaa ggg gaa   8946
Arg Gln Ile Ile Phe Pro Glu Ala Leu Arg Cys Leu Met Lys Gly Glu
     2860   2865   2870

tac acg tta gaa agt atg ctg cat gaa ctg gac ggt ctt att gag cag   8994
Tyr Thr Leu Glu Ser Met Leu His Glu Leu Asp Gly Leu Ile Glu Gln
  2875   2880   2885

acc acc gat ggc gtt ccc ctg cag act cta gtg gaa tct ctt cag gcc   9042
Thr Thr Asp Gly Val Pro Leu Gln Thr Leu Val Glu Ser Leu Gln Ala
2890   2895   2900   2905

tac tta aga aac gca gct atg gga ctg gaa gaa gaa aca cat gct cat   9090
Tyr Leu Arg Asn Ala Ala Met Gly Leu Glu Glu Glu Thr His Ala His
        2910   2915   2920

tac atc gat gtt gcc aga cta cta cat gct cag tac ggt gaa tta atc   9138
Tyr Ile Asp Val Ala Arg Leu Leu His Ala Gln Tyr Gly Glu Leu Ile
        2925   2930   2935

caa ccg aga aat ggt tca gtt gat gaa aca ccc aaa atg tca gct ggc   9186
Gln Pro Arg Asn Gly Ser Val Asp Glu Thr Pro Lys Met Ser Ala Gly
      2940   2945   2950

cag atg ctt ttg gta gca ttc gat ggc atg ttt gct caa gtt gaa act   9234
Gln Met Leu Leu Val Ala Phe Asp Gly Met Phe Ala Gln Val Glu Thr
  2955   2960   2965

gct ttc agc tta tta gtt gaa aag ttg aac aag atg gaa att ccc ata   9282
Ala Phe Ser Leu Leu Val Glu Lys Leu Asn Lys Met Glu Ile Pro Ile

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       2970              2975              2980              2985

gct tgg cga aag att gac atc ata agg gaa gcc agg agt act caa gtt      9330
Ala Trp Arg Lys Ile Asp Ile Ile Arg Glu Ala Arg Ser Thr Gln Val
              2990              2995              3000

aat ttt ttt gat gat gat aat cac cgg cag gtg cta gaa gag att ttc      9378
Asn Phe Phe Asp Asp Asp Asn His Arg Gln Val Leu Glu Glu Ile Phe
              3005              3010              3015

ttt cta aaa aga cta cag act att aag gag ttc ttc agg ctc tgt ggt      9426
Phe Leu Lys Arg Leu Gln Thr Ile Lys Glu Phe Phe Arg Leu Cys Gly
              3020              3025              3030

acc ttt tct aaa aca ttg tca gga tca agt tca ctt gaa gat cag aat      9474
Thr Phe Ser Lys Thr Leu Ser Gly Ser Ser Ser Leu Glu Asp Gln Asn
           3035              3040              3045

act gtg aat ggg cct gta cag att gtc aat gtg aaa acc ctt ttt aga      9522
Thr Val Asn Gly Pro Val Gln Ile Val Asn Val Lys Thr Leu Phe Arg
3050              3055              3060              3065

aac tct tgt ttc agt gaa gac caa atg gcc aaa cct atc aag gca ttc      9570
Asn Ser Cys Phe Ser Glu Asp Gln Met Ala Lys Pro Ile Lys Ala Phe
              3070              3075              3080

aca gct gac ttt gtg agg cag ctc ttg ata ggg cta ccc aac caa gcc      9618
Thr Ala Asp Phe Val Arg Gln Leu Leu Ile Gly Leu Pro Asn Gln Ala
              3085              3090              3095

ctc gga ctc aca ctg tgc agt ttt atc agt gct ctg ggt gta gac atc      9666
Leu Gly Leu Thr Leu Cys Ser Phe Ile Ser Ala Leu Gly Val Asp Ile
              3100              3105              3110

att gct caa gta gag gca aag gac ttt ggt gcc gaa agc aaa gtt tct      9714
Ile Ala Gln Val Glu Ala Lys Asp Phe Gly Ala Glu Ser Lys Val Ser
           3115              3120              3125

gtt gat gat ctc tgt aag aaa gcg gtg gaa cat aac atc cag ata ggg      9762
Val Asp Asp Leu Cys Lys Lys Ala Val Glu His Asn Ile Gln Ile Gly
3130              3135              3140              3145

aag ttc tct cag ctg gtt atg aac agg gca act gtg tta gca agt tct      9810
Lys Phe Ser Gln Leu Val Met Asn Arg Ala Thr Val Leu Ala Ser Ser
           3150              3155              3160
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tac gac act gcc tgg aag aag cat gac ttg gtg cga agg cta gaa acc   9858
Tyr Asp Thr Ala Trp Lys Lys His Asp Leu Val Arg Arg Leu Glu Thr
        3165                3170                3175

agt att tct tct tgt aag aca agc ctg cag cgg gtt cag ctg cat att   9906
Ser Ile Ser Ser Cys Lys Thr Ser Leu Gln Arg Val Gln Leu His Ile
        3180                3185                3190

gcc atg ttt cag tgg caa cat gaa gat cta ctt atc aat aga cca caa   9954
Ala Met Phe Gln Trp Gln His Glu Asp Leu Leu Ile Asn Arg Pro Gln
    3195                3200                3205

gcc atg tca gtc aca cct ccc cca cgg tct gct atc cta acc agc atg   10002
Ala Met Ser Val Thr Pro Pro Pro Arg Ser Ala Ile Leu Thr Ser Met
3210                3215                3220                3225

aaa aag aag ctg cat acc ctg agc cag att gaa act tct att gcg aca   10050
Lys Lys Lys Leu His Thr Leu Ser Gln Ile Glu Thr Ser Ile Ala Thr
            3230                3235                3240

gtt cag gag aag cta gct gca ctt gaa tca agt att gaa cag cga ctc   10098
Val Gln Glu Lys Leu Ala Ala Leu Glu Ser Ser Ile Glu Gln Arg Leu
        3245                3250                3255

aag tgg gca ggt ggt gcc aac cct gca ttg gcc cct gta cta caa gat   10146
Lys Trp Ala Gly Gly Ala Asn Pro Ala Leu Ala Pro Val Leu Gln Asp
        3260                3265                3270

ttt gaa gca acg ata gct gaa aga aga aat ctt gtc ctt aaa gag agc   10194
Phe Glu Ala Thr Ile Ala Glu Arg Arg Asn Leu Val Leu Lys Glu Ser
        3275                3280                3285

caa aga gca agt cag gtc aca ttt ctc tgc agc aat atc att cat ttt   10242
Gln Arg Ala Ser Gln Val Thr Phe Leu Cys Ser Asn Ile Ile His Phe
3290                3295                3300                3305

gaa agt tta cga aca aga act gca gaa gcc tta aac ctg gat gcg gcg   10290
Glu Ser Leu Arg Thr Arg Thr Ala Glu Ala Leu Asn Leu Asp Ala Ala
            3310                3315                3320

tta ttt gaa cta atc aag cga tgt cag cag atg tgt tcg ttt gca tca   10338
Leu Phe Glu Leu Ile Lys Arg Cys Gln Gln Met Cys Ser Phe Ala Ser
        3325                3330                3335

cag ttt aac agt tca gtg tct gag tta gag ctt cgt tta tta cag aga   10386
Gln Phe Asn Ser Ser Val Ser Glu Leu Glu Leu Arg Leu Leu Gln Arg
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                    3340   3345   3350

gtg gac act ggt ctt gaa cat cct att ggc agc tct gaa tgg ctt ttg   10434
Val Asp Thr Gly Leu Glu His Pro Ile Gly Ser Ser Glu Trp Leu Leu
   3355   3360   3365

tca gca cac aaa cag ttg acc cag gat atg tct act cag agg gca att   10482
Ser Ala His Lys Gln Leu Thr Gln Asp Met Ser Thr Gln Arg Ala Ile
3370   3375   3380   3385

cag aca gag aaa gag cag cag ata gaa acg gtc tgt gaa aca att cag   10530
Gln Thr Glu Lys Glu Gln Gln Ile Glu Thr Val Cys Glu Thr Ile Gln
            3390   3395   3400

aat ctg gtt gat aat ata aag act gtg ctc act ggt cat aac cga cag   10578
Asn Leu Val Asp Asn Ile Lys Thr Val Leu Thr Gly His Asn Arg Gln
            3405   3410   3415

ctt gga gat gtc aaa cat ctc ttg aaa gct atg gct aag gat gaa gaa   10626
Leu Gly Asp Val Lys His Leu Leu Lys Ala Met Ala Lys Asp Glu Glu
            3420   3425   3430

gct gct ctg gca gat ggt gaa gat gtt ccc tat gag aac agt gtt agg   10674
Ala Ala Leu Ala Asp Gly Glu Asp Val Pro Tyr Glu Asn Ser Val Arg
            3435   3440   3445

cag ttt ttg ggt gaa tat aaa tca tgg caa gac aac att caa aca gtt   10722
Gln Phe Leu Gly Glu Tyr Lys Ser Trp Gln Asp Asn Ile Gln Thr Val
3450   3455   3460   3465

cta ttt aca tta gtc cag gct atg ggt cag gtt cga agt caa gaa cac   10770
Leu Phe Thr Leu Val Gln Ala Met Gly Gln Val Arg Ser Gln Glu His
            3470   3475   3480

gtt gaa atg ctc cag gaa atc act ccc acc ttg aaa gaa ctg aaa aca   10818
Val Glu Met Leu Gln Glu Ile Thr Pro Thr Leu Lys Glu Leu Lys Thr
            3485   3490   3495

caa agt cag agt atc tat aat aat tta gtg agt ttt gca tca ccc tta   10866
Gln Ser Gln Ser Ile Tyr Asn Asn Leu Val Ser Phe Ala Ser Pro Leu
   3500   3505   3510

gtc acc gat gca aca aat gaa tgt tcg agt cca acg tca tct gct act   10914
Val Thr Asp Ala Thr Asn Glu Cys Ser Ser Pro Thr Ser Ser Ala Thr
   3515   3520   3525

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tat cag cca tcc ttc gct gca gca gtc cgg agt aac act ggc cag aag    10962
Tyr Gln Pro Ser Phe Ala Ala Ala Val Arg Ser Asn Thr Gly Gln Lys
3530          3535          3540          3545


act cag cct gat gtc atg tca cag aat gct aga aag ctg atc cag aaa    11010
Thr Gln Pro Asp Val Met Ser Gln Asn Ala Arg Lys Leu Ile Gln Lys
        3550          3555          3560


aat ctt gct aca tca gct gat act cca cca agc acc gtt cca gga act    11058
Asn Leu Ala Thr Ser Ala Asp Thr Pro Pro Ser Thr Val Pro Gly Thr
        3565          3570          3575


ggc aag agt gtt gct tgt agt cct aaa aag gca gtc aga gac cct aaa    11106
Gly Lys Ser Val Ala Cys Ser Pro Lys Lys Ala Val Arg Asp Pro Lys
        3580          3585          3590


act ggg aaa gcg gtg caa gag aga aac tcc tat gca gtg agt gtg tgg    11154
Thr Gly Lys Ala Val Gln Glu Arg Asn Ser Tyr Ala Val Ser Val Trp
   3595          3600          3605


aag aga gtg aaa gcc aag tta gag ggc cga gat gtt gat ccg aat agg    11202
Lys Arg Val Lys Ala Lys Leu Glu Gly Arg Asp Val Asp Pro Asn Arg
3610          3615          3620          3625


agg atg tca gtt gct gaa cag gtt gac tat gtc att aag gaa gca act    11250
Arg Met Ser Val Ala Glu Gln Val Asp Tyr Val Ile Lys Glu Ala Thr
        3630          3635          3640


aat cta gat aac ttg gct cag ctg tat gaa ggt tgg aca gcc tgg gtg    11298
Asn Leu Asp Asn Leu Ala Gln Leu Tyr Glu Gly Trp Thr Ala Trp Val
        3645          3650          3655


tga atggcaagac agtagatgag tctggttaag cgaggtcaga catccaccag          11351


aatcaactca gcctcaggca tccaaagcca caccacagtc ggtggtgatg caactggggg   11411

cttactctga ggaaacctag gaaatctcgg tgcactagga agtgaatccc gcaggacagc   11471

tgcactcagg gatacgccca acaccatggc ctgcaacccc agggtcaagg gtgaaggaaa   11531

gcaaagctca ccgcctgaac acggagattg tctttctgcc acagaacagc agcagacgtg   11591

tcgggaggtt agctgcggaa agaaatcggg atgccgcgga gcacagagtg atttggaact   11651

ccattccacc tgaccctgtg tgtacaatcc aggaaaaaaa caaaccccac tcagaaacag   11711
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            20   25   30
Ala Asp Pro Gly Asn Leu Lys Tyr Ser Ser Ser Arg Asp Arg Gly Gly
        35   40   45
Ser Ser Ser Tyr Gly Leu Gln Pro Ser Asn Ser Ala Val Val Ser Arg
        50   55   60
Gln Arg His Asp Asp Thr Arg Val His Ala Asp Ile Gln Asn Asp Glu
65   70   75   80
Lys Gly Gly Tyr Ser Val Asn Gly Gly Ser Gly Glu Asn Thr Tyr Gly
                85   90   95
Arg Lys Ser Leu Gly Gln Glu Leu Arg Val Asn Asn Val Thr Ser Pro
            100   105   110
Glu Phe Thr Ser Val Gln His Gly Ser Arg Ala Leu Ala Thr Lys Asp
        115   120   125
Met Arg Lys Ser Gln Glu Arg Ser Met Ser Tyr Ser Asp Glu Ser Arg
        130   135   140
Leu Ser Asn Leu Leu Arg Arg Ile Thr Arg Glu Asp Asp Arg Asp Arg
145   150   155   160
Arg Leu Ala Thr Val Lys Gln Leu Lys Glu Phe Ile Gln Gln Pro Glu
            165   170   175
Asn Lys Leu Val Leu Val Lys Gln Leu Asp Asn Ile Leu Ala Ala Val
            180   185   190
His Asp Val Leu Asn Glu Ser Ser Lys Leu Leu Gln Glu Leu Arg Gln
        195   200   205
Glu Gly Ala Cys Cys Leu Gly Leu Leu Cys Ala Ser Leu Ser Tyr Glu
        210   215   220
Ala Glu Lys Ile Phe Lys Trp Ile Phe Ser Lys Phe Ser Ser Ser Ala
225   230   235   240
Lys Asp Glu Val Lys Leu Leu Tyr Leu Cys Ala Thr Tyr Lys Ala Leu
            245   250   255
Glu Thr Val Gly Glu Lys Lys Ala Phe Ser Ser Val Met Gln Leu Val
            260   265   270
Met Thr Ser Leu Gln Ser Ile Leu Glu Asn Val Asp Thr Pro Glu Leu
        275   280   285

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Leu Cys Lys Cys Val Lys Cys Ile Leu Leu Val Ala Arg Cys Tyr Pro
    290                 295                 300
His Ile Phe Ser Thr Asn Phe Arg Asp Thr Val Asp Ile Leu Val Gly
305                 310                 315                 320
Trp His Ile Asp His Thr Gln Lys Pro Ser Leu Thr Gln Gln Val Ser
                325                 330                 335
Gly Trp Leu Gln Ser Leu Glu Pro Phe Trp Val Ala Asp Leu Ala Phe
            340                 345                 350
Ser Thr Thr Leu Leu Gly Gln Phe Leu Glu Asp Met Glu Ala Tyr Ala
            355                 360                 365
Glu Asp Leu Ser His Val Ala Ser Gly Glu Ser Val Asp Glu Asp Val
    370                 375                 380
Pro Pro Pro Ser Val Ser Leu Pro Lys Leu Ala Ala Leu Leu Arg Val
385                 390                 395                 400
Phe Ser Thr Val Val Arg Ser Ile Gly Glu Arg Phe Ser Pro Ile Arg
                405                 410                 415
Gly Pro Pro Ile Thr Glu Ala Tyr Val Thr Asp Val Leu Tyr Arg Val
                420                 425                 430
Met Arg Cys Val Thr Ala Ala Asn Gln Val Phe Phe Ser Glu Ala Val
            435                 440                 445
Leu Thr Ala Ala Asn Glu Cys Val Gly Val Leu Leu Gly Ser Leu Asp
    450                 455                 460
Pro Ser Met Thr Ile His Cys Asp Met Val Ile Thr Tyr Gly Leu Asp
465                 470                 475                 480
Gln Leu Glu Asn Cys Gln Thr Cys Gly Thr Asp Tyr Ile Ile Ser Val
                485                 490                 495
Leu Asn Leu Leu Thr Leu Ile Val Glu Gln Ile Asn Thr Lys Leu Pro
            500                 505                 510
Ser Ser Phe Val Glu Lys Leu Phe Ile Pro Ser Ser Lys Leu Leu Phe
            515                 520                 525
Leu Arg Tyr His Lys Glu Lys Glu Val Val Ala Val Ala His Ala Val
    530                 535                 540
Tyr Gln Ala Val Leu Ser Leu Lys Asn Ile Pro Val Leu Glu Thr Ala
545                 550                 555                 560
Tyr Lys Leu Ile Leu Gly Glu Met Thr Cys Ala Leu Asn Asn Leu Leu
                565                 570                 575
His Ser Leu Gln Leu Pro Glu Ala Cys Ser Glu Ile Lys His Glu Ala
            580                 585                 590
Phe Lys Asn His Val Phe Asn Val Asp Asn Ala Lys Phe Val Val Lys
    595                 600                 605
Phe Asp Leu Ser Ala Leu Thr Thr Ile Gly Asn Ala Lys Asn Ser Leu
    610                 615                 620
Ile Gly Met Trp Ala Leu Ser Pro Thr Val Phe Ala Leu Leu Ser Lys
625                 630                 635                 640
Asn Leu Met Ile Val His Ser Asp Leu Ala Val His Phe Pro Ala Ile
                645                 650                 655
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Gln Tyr Ala Val Leu Tyr Thr Leu Tyr Ser His Cys Thr Arg His Asp
            660   665   670
His Phe Ile Ser Ser Ser Leu Ser Ser Ala Ser Pro Ser Leu Phe Asp
            675   680   685
Gly Ala Val Ile Ser Thr Val Thr Thr Ala Thr Lys Lys His Phe Ser
        690   695   700
Ile Ile Leu Asn Leu Leu Gly Ile Leu Leu Lys Lys Asp Asn Leu Asn
705   710   715   720
Gln Asp Thr Arg Lys Leu Leu Met Thr Trp Ala Leu Glu Ala Ala Val
                725   730   735
Leu Met Arg Lys Ser Glu Thr Tyr Ala Pro Leu Phe Ser Leu Pro Ser
            740   745   750
Phe His Lys Phe Cys Lys Gly Leu Leu Ala Asn Thr Leu Val Glu Asp
        755   760   765
Val Asn Ile Cys Leu Gln Ala Cys Ser Ser Leu His Ala Leu Ser Ser
    770   775   780
Ser Leu Pro Asp Asp Leu Leu Gln Arg Cys Val Asp Val Cys Arg Val
785   790   795   800
Gln Leu Val His Ser Gly Thr Arg Ile Arg Gln Ala Phe Gly Lys Leu
                805   810   815
Leu Lys Ser Ile Pro Leu Asp Val Val Leu Ser Asn Asn Asn His Thr
                820   825   830
Glu Ile Gln Glu Ile Ser Leu Ala Leu Arg Ser His Met Ser Lys Ala
                835   840   845
Pro Ser Asn Thr Phe His Pro Gln Asp Phe Ser Asp Val Ile Ser Phe
    850   855   860
Ile Leu Tyr Gly Asn Ser His Arg Thr Gly Lys Asp Asn Trp Leu Glu
865   870   875   880
Arg Leu Phe Tyr Ser Cys Gln Arg Leu Asp Lys Arg Asp Gln Ser Thr
                885   890   895
Ile Pro Arg Asn Leu Leu Lys Thr Asp Ala Val Leu Trp Gln Trp Ala
            900   905   910
Ile Trp Glu Ala Ala Gln Phe Thr Val Leu Ser Lys Leu Arg Thr Pro
        915   920   925
Leu Gly Arg Ala Gln Asp Thr Phe Gln Thr Ile Glu Gly Ile Ile Arg
    930   935   940
Ser Leu Ala Ala His Thr Leu Asn Pro Asp Gln Asp Val Ser Gln Trp
945   950   955   960
Thr Thr Ala Asp Asn Asp Glu Gly His Gly Asn Asn Gln Leu Arg Leu
                965   970   975
Val Leu Leu Leu Gln Tyr Leu Glu Asn Leu Glu Lys Leu Met Tyr Asn
            980   985   990
Ala Tyr Glu Gly Cys Ala Asn Ala Leu Thr Ser Pro Pro Lys Val Ile
        995   1000   1005
Arg Thr Phe Phe Tyr Thr Asn Arg Gln Thr Cys Gln Asp Trp Leu Thr
    1010   1015   1020

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Arg Ile Arg Leu Ser Ile Met Arg Val Gly Leu Leu Ala Gly Gln Pro
1025            1030            1035            1040
Ala Val Thr Val Arg His Gly Phe Asp Leu Leu Thr Glu Met Lys Thr
               1045            1050            1055
Thr Ser Leu Ser Gln Gly Asn Glu Leu Glu Val Thr Ile Met Met Val
               1060            1065            1070
Val Glu Ala Leu Cys Glu Leu His Cys Pro Glu Ala Ile Gln Gly Ile
           1075            1080            1085
Ala Val Trp Ser Ser Ser Ile Val Gly Lys Asn Leu Leu Trp Ile Asn
        1090            1095            1100
Ser Val Ala Gln Gln Ala Glu Gly Arg Phe Glu Lys Ala Ser Val Glu
1105            1110            1115            1120
Tyr Gln Glu His Leu Cys Ala Met Thr Gly Val Asp Cys Cys Ile Ser
               1125            1130            1135
Ser Phe Asp Lys Ser Val Leu Thr Leu Ala Asn Ala Gly Arg Asn Ser
               1140            1145            1150
Ala Ser Pro Lys His Ser Leu Asn Gly Glu Ser Arg Lys Thr Val Leu
        1155            1160            1165
Ser Lys Pro Thr Asp Ser Ser Pro Glu Val Ile Asn Tyr Leu Gly Asn
     1170            1175            1180
Lys Ala Cys Glu Phe Tyr Ile Ser Ile Ala Asp Trp Ala Ala Val Gln
1185            1190            1195            1200
Glu Trp Gln Asn Ala Ile His Asp Leu Lys Lys Ser Thr Ser Ser Thr
               1205            1210            1215
Ser Leu Asn Leu Lys Ala Asp Phe Asn Tyr Ile Lys Ser Leu Ser Ser
        1220            1225            1230
Phe Glu Ser Gly Lys Phe Val Glu Cys Thr Glu Gln Leu Glu Leu Leu
        1235            1240            1245
Pro Gly Glu Asn Ile Asn Leu Leu Ala Gly Gly Ser Lys Glu Lys Ile
     1250            1255            1260
Asp Met Lys Lys Leu Leu Pro Asn Met Leu Ser Pro Asp Pro Arg Glu
1265            1270            1275            1280
Leu Gln Lys Ser Ile Glu Val Gln Leu Leu Arg Ser Ser Val Cys Leu
        1285            1290            1295
Ala Thr Ala Leu Asn Pro Ile Glu Gln Asp Gln Lys Trp Gln Ser Ile
        1300            1305            1310
Thr Glu Asn Val Val Lys Tyr Leu Lys Gln Thr Ser Arg Ile Ala Ile
     1315            1320            1325
Gly Pro Leu Arg Leu Ser Thr Leu Thr Val Ser Gln Ser Leu Pro Val
     1330            1335            1340
Leu Ser Thr Leu Gln Leu Tyr Cys Ser Ser Ala Leu Glu Asn Thr Val
1345            1350            1355            1360
Ser Asn Arg Leu Ser Thr Glu Asp Cys Leu Ile Pro Leu Phe Ser Glu
               1365            1370            1375
Ala Leu Arg Ser Cys Lys Gln His Asp Val Arg Pro Trp Met Gln Ala
     1380            1385            1390
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Leu Arg Tyr Thr Met Tyr Gln Asn Gln Leu Leu Glu Lys Ile Lys Glu
    1395   1400   1405

Gln Thr Val Pro Ile Arg Ser His Leu Met Glu Leu Gly Leu Thr Ala
1410   1415   1420

Ala Lys Phe Ala Arg Lys Arg Gly Asn Val Ser Leu Ala Thr Arg Leu
1425   1430   1435   1440

Leu Ala Gln Cys Ser Glu Val Gln Leu Gly Lys Thr Thr Thr Ala Gln
    1445   1450   1455

Asp Leu Val Gln His Phe Lys Lys Leu Ser Thr Gln Gly Gln Val Asp
     1460   1465   1470

Glu Lys Trp Gly Pro Glu Leu Asp Ile Glu Lys Thr Lys Leu Leu Tyr
    1475   1480   1485

Thr Ala Gly Gln Ser Thr His Ala Met Glu Met Leu Ser Ser Cys Ala
   1490   1495   1500

Ile Ser Phe Cys Lys Ser Val Lys Ala Glu Tyr Ala Val Ala Lys Ser
1505   1510   1515   1520

Ile Leu Thr Leu Ala Lys Trp Ile Gln Ala Glu Trp Lys Glu Ile Ser
     1525   1530   1535

Gly Gln Leu Lys Gln Val Tyr Arg Ala Gln His Gln Gln Asn Phe Thr
     1540   1545   1550

Gly Leu Ser Thr Leu Ser Lys Asn Ile Leu Thr Leu Ile Glu Leu Pro
    1555   1560   1565

Ser Val Asn Thr Met Glu Glu Glu Tyr Pro Arg Ile Glu Ser Glu Ser
   1570   1575   1580

Thr Val His Ile Gly Val Gly Glu Pro Asp Phe Ile Leu Gly Gln Leu
1585   1590   1595   1600

Tyr His Leu Ser Ser Val Gln Ala Pro Glu Val Ala Lys Ser Trp Ala
     1605   1610   1615

Ala Leu Ala Ser Trp Ala Tyr Arg Trp Gly Arg Lys Val Val Asp Asn
     1620   1625   1630

Ala Ser Gln Gly Glu Gly Val Arg Leu Leu Pro Arg Glu Lys Ser Glu
    1635   1640   1645

Val Gln Asn Leu Leu Pro Asp Thr Ile Thr Glu Glu Glu Lys Glu Arg
   1650   1655   1660

Ile Tyr Gly Ile Leu Gly Gln Ala Val Cys Arg Pro Ala Gly Ile Gln
1665   1670   1675   1680

Asp Glu Asp Ile Thr Leu Gln Ile Thr Glu Ser Glu Asp Asn Glu Glu
     1685   1690   1695

Asp Asp Met Val Asp Val Ile Trp Arg Gln Leu Ile Ser Ser Cys Pro
    1700   1705   1710

Trp Leu Ser Glu Leu Asp Glu Ser Ala Thr Glu Gly Val Ile Lys Val
   1715   1720   1725

Trp Arg Lys Val Val Asp Arg Ile Phe Ser Leu Tyr Lys Leu Ser Cys
  1730   1735   1740

Ser Ala Tyr Phe Thr Phe Leu Lys Leu Asn Ala Gly Gln Ile Pro Leu
1745   1750   1755   1760

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Asp Glu Asp Asp Pro Arg Leu His Leu Ser His Arg Val Glu Gln Ser
            1765                1770                1775
Thr Asp Asp Met Ile Val Met Ala Thr Leu Arg Leu Leu Arg Leu Leu
        1780                1785                1790
Val Lys His Ala Gly Glu Leu Arg Gln Tyr Leu Glu His Gly Leu Glu
        1795                1800                1805
Thr Thr Pro Thr Ala Pro Trp Arg Gly Ile Ile Pro Gln Leu Phe Ser
    1810                1815                1820
Arg Leu Asn His Pro Glu Val Tyr Val Arg Gln Ser Ile Cys Asn Leu
1825                1830                1835                1840
Leu Cys Arg Val Ala Gln Asp Ser Pro His Leu Ile Leu Tyr Pro Ala
            1845                1850                1855
Ile Val Gly Thr Ile Ser Leu Ser Ser Glu Ser Gln Ala Ser Gly Asn
            1860                1865                1870
Lys Phe Ser Thr Ala Ile Pro Thr Leu Leu Gly Asn Ile Gln Gly Glu
        1875                1880                1885
Glu Leu Leu Val Ser Glu Cys Glu Gly Gly Ser Pro Pro Ala Ser Gln
    1890                1895                1900
Asp Ser Asn Lys Asp Glu Pro Lys Ser Gly Leu Asn Glu Asp Gln Ala
1905                1910                1915                1920
Met Met Gln Asp Cys Tyr Ser Lys Ile Val Asp Lys Leu Ser Ser Ala
            1925                1930                1935
Asn Pro Thr Met Val Leu Gln Val Gln Met Leu Val Ala Glu Leu Arg
            1940                1945                1950
Arg Val Thr Val Leu Trp Asp Glu Leu Trp Leu Gly Val Leu Leu Gln
        1955                1960                1965
Gln His Met Tyr Val Leu Arg Arg Ile Gln Gln Leu Glu Asp Glu Val
    1970                1975                1980
Lys Arg Val Gln Asn Asn Asn Thr Leu Arg Lys Glu Glu Lys Ile Ala
1985                1990                1995                2000
Ile Met Arg Glu Arg His Thr Ala Leu Met Lys Pro Ile Val Phe Ala
            2005                2010                2015
Leu Glu His Val Arg Ser Ile Thr Ala Ala Pro Ala Glu Thr Pro His
        2020                2025                2030
Glu Lys Trp Phe Gln Asp Asn Tyr Gly Asp Ala Ile Glu Asn Ala Leu
        2035                2040                2045
Glu Lys Leu Lys Thr Pro Leu Asn Pro Ala Lys Pro Gly Ser Ser Trp
    2050                2055                2060
Ile Pro Phe Lys Glu Ile Met Leu Ser Leu Gln Gln Arg Ala Gln Lys
2065                2070                2075                2080
Arg Ala Ser Tyr Ile Leu Arg Leu Glu Glu Ile Ser Pro Trp Leu Ala
            2085                2090                2095
Ala Met Thr Asn Thr Glu Ile Ala Leu Pro Gly Glu Val Ser Ala Arg
            2100                2105                2110
Asp Thr Val Thr Ile His Ser Val Gly Gly Thr Ile Thr Ile Leu Pro
    2115                2120                2125
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Thr Lys Thr Lys Pro Lys Lys Leu Leu Phe Leu Gly Ser Asp Gly Lys
  2130   2135   2140
Ser Tyr Pro Tyr Leu Phe Lys Gly Leu Glu Asp Leu His Leu Asp Glu
2145   2150   2155   2160
Arg Ile Met Gln Phe Leu Ser Ile Val Asn Thr Met Phe Ala Thr Ile
              2165   2170   2175
Asn Arg Gln Glu Thr Pro Arg Phe His Ala Arg His Tyr Ser Val Thr
            2180   2185   2190
Pro Leu Gly Thr Arg Ser Gly Leu Ile Gln Trp Val Asp Gly Ala Thr
          2195   2200   2205
Pro Leu Phe Gly Leu Tyr Lys Arg Trp Gln Gln Arg Glu Ala Ala Leu
      2210   2215   2220
Gln Ala Gln Lys Ala Gln Asp Ser Tyr Gln Thr Pro Gln Asn Pro Gly
2225   2230   2235   2240
Ile Val Pro Arg Pro Ser Glu Leu Tyr Tyr Ser Lys Ile Gly Pro Ala
              2245   2250   2255
Leu Lys Thr Val Gly Leu Ser Leu Asp Val Ser Arg Arg Asp Trp Pro
            2260   2265   2270
Leu His Val Met Lys Ala Val Leu Glu Glu Leu Met Glu Ala Thr Pro
          2275   2280   2285
Pro Asn Leu Leu Ala Lys Glu Leu Trp Ser Ser Cys Thr Thr Pro Asp
      2290   2295   2300
Glu Trp Trp Arg Val Thr Gln Ser Tyr Ala Arg Ser Thr Ala Val Met
2305   2310   2315   2320
Ser Met Val Gly Tyr Ile Ile Gly Leu Gly Asp Arg His Leu Asp Asn
              2325   2330   2335
Val Leu Ile Asp Met Thr Thr Gly Glu Val Val His Ile Asp Tyr Asn
            2340   2345   2350
Val Cys Phe Glu Lys Gly Lys Ser Leu Arg Val Pro Glu Lys Val Pro
        2355   2360   2365   ⌠
Phe Arg Met Thr Gln Asn Ile Glu Thr Ala Leu Gly Val Thr Gly Val
      2370   2375   2380
Glu Gly Val Phe Arg Leu Ser Cys Glu Gln Val Leu His Ile Met Arg
2385   2390   2395   2400
Arg Gly Arg Glu Thr Leu Leu Thr Leu Leu Glu Ala Phe Val Tyr Asp
              2405   2410   2415
Pro Leu Val Asp Trp Thr Ala Gly Gly Glu Ala Gly Phe Ala Gly Ala
            2420   2425   2430
Val Tyr Gly Gly Gly Gly Gln Gln Ala Glu Ser Lys Gln Ser Lys Arg
          2435   2440   2445
Glu Met Glu Arg Glu Ile Thr Arg Ser Leu Phe Ser Ser Arg Val Ala
      2450   2455   2460
Glu Ile Lys Val Asn Trp Phe Lys Asn Arg Asp Glu Met Leu Val Val
2465   2470   2475   2480
Leu Pro Lys Leu Asp Gly Ser Leu Asp Glu Tyr Leu Ser Leu Gln Glu
            2485   2490   2495

Gln Leu Thr Asp Val Glu Lys Leu Gln Gly Lys Leu Leu Glu Glu Ile
       2500   2505   2510

Glu Phe Leu Glu Gly Ala Glu Gly Val Asp His Pro Ser His Thr Leu
     2515   2520   2525

Gln His Arg Tyr Ser Glu His Thr Gln Leu Gln Thr Gln Gln Arg Ala
   2530   2535   2540

Val Gln Glu Ala Ile Gln Val Lys Leu Asn Glu Phe Glu Gln Trp Ile
2545   2550   2555   2560

Thr His Tyr Gln Ala Ala Phe Asn Asn Leu Glu Ala Thr Gln Leu Ala
       2565   2570   2575

Ser Leu Leu Gln Glu Ile Ser Thr Gln Met Asp Leu Gly Pro Pro Ser
       2580   2585   2590

Tyr Val Pro Ala Thr Ala Phe Leu Gln Asn Ala Gly Gln Ala His Leu
      2595   2600   2605

Ile Ser Gln Cys Glu Gln Leu Glu Gly Glu Val Gly Ala Leu Leu Gln
     2610   2615   2620

Gln Arg Arg Ser Val Leu Arg Gly Cys Leu Glu Gln Leu His His Tyr
2625   2630   2635   2640

Ala Thr Val Ala Leu Gln Tyr Pro Lys Ala Ile Phe Gln Lys His Arg
       2645   2650   2655

Ile Glu Gln Trp Lys Thr Trp Met Glu Glu Leu Ile Cys Asn Thr Thr
       2660   2665   2670

Val Glu Arg Cys Gln Glu Leu Tyr Arg Lys Tyr Glu Met Gln Tyr Ala
     2675   2680   2685

Pro Gln Pro Pro Thr Val Cys Gln Phe Ile Thr Ala Thr Glu Met
     2690   2695   2700

Thr Leu Gln Arg Tyr Ala Ala Asp Ile Asn Ser Arg Leu Ile Arg Gln
2705   2710   2715   2720

Val Glu Arg Leu Lys Gln Glu Ala Val Thr Val Pro Val Cys Glu Asp
       2725   2730   2735

Gln Leu Lys Glu Ile Glu Arg Cys Ile Lys Val Phe Leu His Glu Asn
       2740   2745   2750

Gly Glu Glu Gly Ser Leu Ser Leu Ala Ser Val Ile Ile Ser Ala Leu
       2755   2760   2765

Cys Thr Leu Thr Arg Arg Asn Leu Met Met Glu Gly Ala Ala Ser Ser
   2770   2775   2780

Ala Gly Glu Gln Leu Val Asp Leu Thr Ser Arg Asp Gly Ala Trp Phe
2785   2790   2795   2800

Leu Glu Glu Leu Cys Ser Met Ser Gly Asn Val Thr Cys Leu Val Gln
       2805   2810   2815

Leu Leu Lys Gln Cys His Leu Val Pro Gln Asp Leu Asp Ile Pro Asn
      2820   2825   2830

Pro Met Glu Ala Ser Glu Thr Val His Leu Ala Asn Gly Val Tyr Thr
     2835   2840   2845

Ser Leu Gln Glu Leu Asn Ser Asn Phe Arg Gln Ile Ile Phe Pro Glu
   2850   2855   2860

Ala Leu Arg Cys Leu Met Lys Gly Glu Tyr Thr Leu Glu Ser Met Leu
2865   2870   2875   2880
His Glu Leu Asp Gly Leu Ile Glu Gln Thr Thr Asp Gly Val Pro Leu
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Gln Thr Leu Val Glu Ser Leu Gln Ala Tyr Leu Arg Asn Ala Ala Met
         2900   2905   2910
Gly Leu Glu Glu Glu Thr His Ala His Tyr Ile Asp Val Ala Arg Leu
         2915   2920   2925
Leu His Ala Gln Tyr Gly Glu Leu Ile Gln Pro Arg Asn Gly Ser Val
         2930   2935   2940
Asp Glu Thr Pro Lys Met Ser Ala Gly Gln Met Leu Leu Val Ala Phe
2945   2950   2955   2960
Asp Gly Met Phe Ala Gln Val Glu Thr Ala Phe Ser Leu Leu Val Glu
            2965   2970   2975
Lys Leu Asn Lys Met Glu Ile Pro Ile Ala Trp Arg Lys Ile Asp Ile
            2980   2985   2990
Ile Arg Glu Ala Arg Ser Thr Gln Val Asn Phe Phe Asp Asp Asp Asn
         2995   3000   3005
His Arg Gln Val Leu Glu Glu Ile Phe Phe Leu Lys Arg Leu Gln Thr
      3010   3015   3020
Ile Lys Glu Phe Phe Arg Leu Cys Gly Thr Phe Ser Lys Thr Leu Ser
3025   3030   3035   3040
Gly Ser Ser Ser Leu Glu Asp Gln Asn Thr Val Asn Gly Pro Val Gln
            3045   3050   3055
Ile Val Asn Val Lys Thr Leu Phe Arg Asn Ser Cys Phe Ser Glu Asp
         3060   3065   3070
Gln Met Ala Lys Pro Ile Lys Ala Phe Thr Ala Asp Phe Val Arg Gln
      3075   3080   3085
Leu Leu Ile Gly Leu Pro Asn Gln Ala Leu Gly Leu Thr Leu Cys Ser
   3090   3095   3100
Phe Ile Ser Ala Leu Gly Val Asp Ile Ile Ala Gln Val Glu Ala Lys
3105   3110   3115   3120
Asp Phe Gly Ala Glu Ser Lys Val Ser Val Asp Asp Leu Cys Lys Lys
         3125   3130   3135
Ala Val Glu His Asn Ile Gln Ile Gly Lys Phe Ser Gln Leu Val Met
      3140   3145   3150
Asn Arg Ala Thr Val Leu Ala Ser Ser Tyr Asp Thr Ala Trp Lys Lys
      3155   3160   3165
His Asp Leu Val Arg Arg Leu Glu Thr Ser Ile Ser Ser Cys Lys Thr
   3170   3175   3180
Ser Leu Gln Arg Val Gln Leu His Ile Ala Met Phe Gln Trp Gln His
3185   3190   3195   3200
Glu Asp Leu Leu Ile Asn Arg Pro Gln Ala Met Ser Val Thr Pro Pro
            3205   3210   3215
Pro Arg Ser Ala Ile Leu Thr Ser Met Lys Lys Lys Leu His Thr Leu
         3220   3225   3230

Ser Gln Ile Glu Thr Ser Ile Ala Thr Val Gln Glu Lys Leu Ala Ala
  3235   3240   3245

Leu Glu Ser Ser Ile Glu Gln Arg Leu Lys Trp Ala Gly Gly Ala Asn
3250   3255   3260

Pro Ala Leu Ala Pro Val Leu Gln Asp Phe Glu Ala Thr Ile Ala Glu
3265   3270   3275   3280

Arg Arg Asn Leu Val Leu Lys Glu Ser Gln Arg Ala Ser Gln Val Thr
  3285   3290   3295

Phe Leu Cys Ser Asn Ile Ile His Phe Glu Ser Leu Arg Thr Arg Thr
  3300   3305   3310

Ala Glu Ala Leu Asn Leu Asp Ala Ala Leu Phe Glu Leu Ile Lys Arg
  3315   3320   3325

Cys Gln Gln Met Cys Ser Phe Ala Ser Gln Phe Asn Ser Ser Val Ser
  3330   3335   3340

Glu Leu Glu Leu Arg Leu Leu Gln Arg Val Asp Thr Gly Leu Glu His
3345   3350   3355   3360

Pro Ile Gly Ser Ser Glu Trp Leu Leu Ser Ala His Lys Gln Leu Thr
    3365   3370   3375

Gln Asp Met Ser Thr Gln Arg Ala Ile Gln Thr Glu Lys Glu Gln Gln
    3380   3385   3390

Ile Glu Thr Val Cys Glu Thr Ile Gln Asn Leu Val Asp Asn Ile Lys
  3395   3400   3405

Thr Val Leu Thr Gly His Asn Arg Gln Leu Gly Asp Val Lys His Leu
3410   3415   3420

Leu Lys Ala Met Ala Lys Asp Glu Glu Ala Ala Leu Ala Asp Gly Glu
3425   3430   3435   3440

Asp Val Pro Tyr Glu Asn Ser Val Arg Gln Phe Leu Gly Glu Tyr Lys
    3445   3450   3455

Ser Trp Gln Asp Asn Ile Gln Thr Val Leu Phe Thr Leu Val Gln Ala
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Met Gly Gln Val Arg Ser Gln Glu His Val Glu Met Leu Gln Glu Ile
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Thr Pro Thr Leu Lys Glu Leu Lys Thr Gln Ser Gln Ser Ile Tyr Asn
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Asn Leu Val Ser Phe Ala Ser Pro Leu Val Thr Asp Ala Thr Asn Glu
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Cys Ser Ser Pro Thr Ser Ser Ala Thr Tyr Gln Pro Ser Phe Ala Ala
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Ala Val Arg Ser Asn Thr Gly Gln Lys Thr Gln Pro Asp Val Met Ser
    3540   3545   3550

Gln Asn Ala Arg Lys Leu Ile Gln Lys Asn Leu Ala Thr Ser Ala Asp
  3555   3560   3565

Thr Pro Pro Ser Thr Val Pro Gly Thr Gly Lys Ser Val Ala Cys Ser
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Pro Lys Lys Ala Val Arg Asp Pro Lys Thr Gly Lys Ala Val Gln Glu
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Arg Asn Ser Tyr Ala Val Ser Val Trp Lys Arg Val Lys Ala Lys Leu
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Glu Gly Arg Asp Val Asp Pro Asn Arg Arg Met Ser Val Ala Glu Gln
              3620   3625   3630

Val Asp Tyr Val Ile Lys Glu Ala Thr Asn Leu Asp Asn Leu Ala Gln
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Leu Tyr Glu Gly Trp Thr Ala Trp Val
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